

ABSTRACT OF THE DISCLOSURE

The present invention relates to a composite material and the method of making same, which comprises a CVD diamond coating applied to a composite substrate of ceramic material and an unreacted carbide-forming material of various configurations and for a variety of applications. One example of the composite material is a composite of SiC and free silicon metal known as Reaction-Bonded Silicon Carbide. Several examples of applications of the invention include: 1) heads or disks for conditioning polishing pads, including pads used in Chemical-Mechanical-Planarization, 2) cutting and dressing tool inserts and tips, 3) heat spreaders for electronic devices, and 4) wear components including mechanical seals and pump seals.